8. (Amended) ~~An optical communication system for transmitting a soliton or~~ soliton-like pulse, comprising a multiplicity of fiber lengths of opposite ~~sign~~ dispersion concatenated together, for management of dispersion,

the fiber lengths being ~~formed as~~ a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the length of the dispersion management system, and wherein the path average ~~dispersion of the multiplicity of unit cells is anomalous.~~

9. (Canceled) A system according to claim 8, wherein the path average dispersion of the multiplicity of unit cells is anomalous.

10. (Amended) An optical communication system according to ~~Claim 8~~, wherein the dispersion magnitude of adjacent fiber lengths of a unit cell are both far from zero in relation to the average dispersion for the unit cell which is close to zero, in order to permit propagation of a pulse wherein the shape of the pulse alternately expands and compresses as it propagates through a unit cell.

11. (Amended) An optical communication system according to Claim 8, wherein the profile of a pulse at the beginning of a unit cell is substantially Gaussian in shape.

12. An optical communication system according to Claim 8, wherein the unit cell is defined to start along the length of a fiber section between its ends, and to end along the length of a fiber section, between it ends.

13. (Amended) An optical communication system ~~according~~ to Claim 8, arranged such that a pulse is launched into the multiplicity of unit cells with a substantially ~~Gaussian~~ shape.

14. (Amended) An optical communication system according to claim 10, wherein the unit cell is defined to start along the length of the fiber section between its ends, and to end along the length of the fiber section between its ends, and a pulse is launched into a unit cell of the dispersion management system with a substantially Gaussian shape.

16. (Amended) ~~An optical communication system for transmitting~~ a soliton or soliton-like pulse, comprising a multiplicity of fiber lengths of opposite sign dispersion concatenated together for management of dispersion,

the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the length of the dispersion management system; wherein the path average dispersion of the multiplicity of unit cells is anomalous; and

wherein the dispersion magnitude ~~of~~ adjacent fiber lengths of a unit cell are both far from zero in relation to the average dispersion of the unit cell which is close to zero, in order to permit the propagation of a pulse through the unit cells wherein the pulse ~~alternately compresses and expands in shape~~ as it propagates through the unit cell.

17. An optical communication system according to claim 16 arranged such that the pulse is launched into the multiplicity of unit cells with a predetermined shape, which shape is repeated during propagation, at a point in each unit cell.

18. (Amended) An optical communication system ~~according to claim 16~~, wherein the profile ~~of a pulse~~ at the beginning of a unit cell is substantially Gaussian in shape.

19. An optical communication system according to claim 16, wherein the unit cell is defined to start along the length of a fiber section between its ends, and to end along the length of a fiber section, between it ends.

20. (Amended) An optical communication system ~~according to claim 16~~, arranged such that ~~a pulse is~~ launched into the multiplicity of unit cells with a substantially Gaussian shape.

22. (Amended) A method of transmitting a soliton or soliton-like pulse, the method comprising:

launching a stable soliton or soliton-like pulse having a predetermined energy into a dispersion management system, the predetermined energy being greater than that for launching a soliton or soliton-like pulse in an equivalent uniform system with equal path average dispersion.

23. A method according to claim 22, comprising providing a dispersion management system being formed as a multiplicity of unit cells, each unit cell comprising two adjacent fiber lengths of opposite signs dispersion, and defining the unit cell to start along the length of a fiber section between its ends, and to end along the length of a fiber section, between its ends.

24. A method according to claim 23, including defining the unit cell to start midway along the length of a fiber section and to end mid-way along the length of a fiber section.

25. (Amended) A method according to claim 23, comprising launching a soliton into the fiber, so that the pulse at the beginning of a unit cell is substantially Gaussian in shape, the shape of the pulse alternately expanding and compressing as it propagates through a unit cell.

26. (Amended) A method according to claim 22, including launching the pulse into the fiber with a predetermined shape.

27. (Amended) A method according to claim 25, including launching the pulse into the fiber with a substantially Gaussian shape.

28. (Amended) A method according to claim 23, comprising propagating a pulse through the dispersion management system with the profile of the pulse at the beginning of each unit cell being the same, and the shape of the pulse alternately expanding and compressing as it propagates through each unit cell.

29. (Amended) A method of transmitting a soliton or soliton-like pulse in an optical communication system, the system comprising a multiplicity of fiber lengths of opposite sign dispersion concatenated together in order to provide a relatively high local dispersion at any given point, but a relatively low path-average dispersion,

the fiber lengths being formed as a multiplicity of unit cells, each unit cell comprising two adjacent fiber lengths of opposite sign dispersion,

the method comprising launching a pulse into the dispersion management system with a predetermined energy , the predetermined energy being greater than that for launching a pulse in an equivalent uniform system with equal path average dispersion,

and transmitting the pulse through the dispersion management system with the pulse profile being the same at the start of each unit cell, whilst alternately compressing and expanding as the pulse progresses through a unit cell.

30. A method according to claim 29, wherein the peak power of the pulse within a unit cell is lower than the initial launched power.

31. (Amended) A method according to claim 30, including launching the pulse into the system with a substantially Gaussian shape.

32. A method according to claim 29, including launching a pulse into the system with a predetermined form, and the pulse profile is repeated at a point within each unit cell.

REMARKS

Summary of the Office Action

In the final Office Action of March 7, 2002, claims 8-14, 16-20 and 22-32 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by either Taga et al. (U.S. Patent No. 5,471,333) or Nakazawa et al (Electronics Letters, Vol. 31, No. 3, pp. 216-217).

Applicant has cancelled claim 9 and amended claims 8, 10, 11, 13, 14, 16, 18, 20, 22, 25-29 and 31. Accordingly, claims 8, 10-14, 16-20, and 22-32 are presently pending.